Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

The care of patients with varicose veins and associated chronic venous diseases: clinical practice guidelines of the Society for Vascular Surgery and the American Venous Forum.

Bibliographic Source(s)

Gloviczki P, Comerota AJ, Dalsing MC, Eklof BG, Gillespie DL, Gloviczki ML, Lohr JM, McLafferty RB, Meissner MH, Murad MH, Padberg FT, Pappas PJ, Passman MA, Raffetto JD, Vasquez MA, Wakefield TW, Society for Vascular Surgery, American Venous Forum. The care of patients with varicose veins and associated chronic venous diseases: clinical practice guidelines of the Society for Vascular Surgery and the American Venous Forum. J Vasc Surg. 2011 May;53(5 Suppl):2S-48S. [375 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

Definitions of the strength of the recommendations (Grade 1 or 2) and quality of the evidence (Level A–C) are provided at the end of the "Major Recommendations" field.

Diagnostic Evaluation

Clinical Examination

For clinical examination of the lower limbs for chronic venous disease (CVD), the Guideline Committee recommends inspection (telangiectasia, varicosity, edema, skin discoloration, corona phlebectatica, lipodermatosclerosis, ulcer), palpation (cord, varicosity, tenderness, induration, reflux, pulses, thrill, groin or abdominal masses), auscultation (bruit), and examination of ankle mobility. Patients should be asked for symptoms of CVD, which may include tingling, aching, burning, pain, muscle cramps, swelling, sensations of throbbing or heaviness, itching skin, restless legs, leg tiredness, and fatigue (Grade 1A).

Duplex Scanning

The Guideline Committee recommends that in patients with CVD, a complete history and detailed physical examination are complemented by duplex scanning of the deep and superficial veins. The test is safe, noninvasive, cost-effective, and reliable (Grade 1A).

The Guideline Committee recommends that the four components of a complete duplex scanning examination for chronic venous disease should be visualization, compressibility, venous flow, including measurement of duration of reflux, and augmentation (Grade 1A).

The Guideline Committee recommends that reflux to confirm valvular incompetence in the upright position of the patients be elicited in one of two ways: either with increased intra-abdominal pressure using a Valsalva maneuver to assess the common femoral vein and the saphenofemoral junction, or for the more distal veins, use of manual or cuff compression and release of the limb distal to the point of examination (Grade 1A).

The Guideline Committee recommends a cutoff value of 1 second for abnormally reversed flow (reflux) in the femoral and popliteal veins and of 500 ms for the great saphenous vein, the small saphenous vein, the tibial, deep femoral, and the perforating veins (Grade 1B).

The Guideline Committee recommends that in patients with chronic venous insufficiency, duplex scanning of the perforating veins is performed selectively. The Guideline Committee recommends that the definition of "pathologic" perforating veins includes those with an outward flow of duration of ≥500 ms, with a diameter of ≥3.5 mm and a location beneath healed or open venous ulcers (clinical, etiology, anatomy, and pathophysiology [CEAP] class C_5-C_6) (Grade 1B). See Table II in the original guideline document for definitions of CEAP classes.

Plethysmography

The Guideline Committee suggests that venous plethysmography be used selectively for the noninvasive evaluation of the venous system in patients with simple varicose veins (CEAP class C_2) (Grade 2C).

The Guideline Committee recommends that venous plethysmography be used for the noninvasive evaluation of the venous system in patients with advanced CVD if duplex scanning does not provide definitive information on pathophysiology (CEAP class C_3-C_6) (Grade 1B).

Imaging Studies

The Guideline Committee recommends that in patients with varicose veins and more advanced CVD, computed tomography venography, magnetic resonance venography, ascending and descending contrast venography, and intravascular ultrasonography are used selectively, including but not limited to post-thrombotic syndrome, thrombotic or nonthrombotic iliac vein obstruction (May-Thurner syndrome), pelvic congestion syndrome, nutcracker syndrome, vascular malformations, venous trauma, tumors, and planned open or endovascular venous interventions (Grade 1B).

Laboratory Evaluation

The Guideline Committee recommends that in patients with CVD, evaluation for thrombophilia is needed selectively for those with recurrent deep vein thrombosis, thrombosis at a young age, or thrombosis in an unusual site. Laboratory examination is needed in patients with longstanding venous stasis ulcers (blood cell count and metabolic panel) and in selected patients who undergo general anesthesia for the treatment of CVD. (Grade 1B).

Classification

The Guideline Committee recommends that CEAP classification be used for patients with CVD. The basic CEAP classification is used for clinical practice, and the full CEAP classification system is used for clinical research (Grade 1A).

The Guideline Committee recommends that primary venous disorders, including simple varicose veins, be differentiated from secondary venous insufficiency and from congenital venous disorders because the three conditions differ in pathophysiology and management (Grade 1B).

Treatment

Outcome Assessment

The Guideline Committee recommends that the revised Venous Clinical Severity Score is used for assessment of clinical outcome after therapy for varicose veins and more advanced chronic CVD (Grade 1B).

The Guideline Committee recommends that a quality-of-life assessment is performed with a disease-specific instrument to evaluate patient-reported outcome and the severity of CVD. (Grade 1B).

The Guideline Committee recommends duplex scanning for follow-up of patients after venous procedures who have symptoms or recurrence of varicose veins (Grade 1B).

The Guideline Committee recommends reporting procedure-related minor and major complications after therapy (Grade 1B).

Medical Treatment

The Guideline Committee suggests venoactive drugs (diosmin, hesperidin, rutosides, sulodexide, micronized purified flavonoid fraction, or horse chestnut seed extract [aescin]) for patients with pain and swelling due to CVD, in countries where these drugs are available (Grade 2B).

The Guideline Committee suggests using pentoxifylline or micronized purified flavonoid fraction, if available, in combination with compression, to accelerate healing of venous ulcers (Grade 2B).

Compression Treatment

The Guideline Committee suggests compression therapy using moderate pressure (20 to 30 mm Hg) for patients with symptomatic varicose veins (Grade 2C).

The Guideline Committee recommends against compression therapy as the primary treatment of symptomatic varicose veins in patients who are candidates for saphenous vein ablation (Grade 1B).

The Guideline Committee recommends compression as the primary therapeutic modality for healing venous ulcers (Grade 1B).

The Guideline Committee recommends compression as an adjuvant treatment to superficial vein ablation for the prevention of ulcer recurrence (Grade 1A).

Open Venous Surgery

For treatment of the incompetent great saphenous vein, the Guideline Committee suggests high ligation and inversion stripping of the saphenous vein to the level of the knee (Grade 2B).

To reduce hematoma formation, pain, and swelling, the Guideline Committee recommends postoperative compression. The recommended period of compression in C_2 patients is 1 week (Grade 1B).

For treatment of small saphenous vein incompetence, the Guideline Committee recommends high ligation of the vein at the knee crease, about 3 to 5 cm distal to the saphenopopliteal junction, with selective invagination stripping of the incompetent portion of the vein (Grade 1B).

To decrease recurrence of venous ulcers, the Guideline Committee recommends ablation of the incompetent superficial veins in addition to compression therapy (Grade 1A).

The Guideline Committee suggests preservation of the saphenous vein using the ambulatory conservative hemodynamic treatment of varicose veins (CHIVA) technique only selectively in patients with varicose veins, when performed by trained venous interventionists (Grade 2B).

The Guideline Committee suggests preservation of the saphenous vein using the ambulatory selective varicose vein ablation under local anesthesia (ASVAL) procedure only selectively in patients with varicose veins (Grade 2C).

The Guideline Committee recommends ambulatory phlebectomy for treatment of varicose veins, performed with saphenous vein ablation, either during the same procedure or at a later stage. If general anesthesia is required for phlebectomy, the Guideline Committee suggests concomitant saphenous ablation (Grade 1B).

The Guideline Committee suggests transilluminated powered phlebectomy using lower oscillation speeds and extended tumescence as an alternative to traditional phlebectomy for extensive varicose veins (Grade 2C).

For treatment of recurrent varicose veins, the Guideline Committee suggests ligation of the saphenous stump, ambulatory phlebectomy, sclerotherapy, or endovenous thermal ablation, depending on the etiology, source, location, and extent of varicosity (Grade 2C).

Endovenous Thermal Ablation

Endovenous thermal ablations (laser and radiofrequency ablations) are safe and effective, and the Guideline Committee recommends them for treatment of saphenous incompetence (Grade 1B).

Because of reduced convalescence and less pain and morbidity, the Guideline Committee recommends endovenous thermal ablation of the incompetent saphenous vein over open surgery (Grade 1B).

Sclerotherapy of Varicose Veins

The Guideline Committee recommends liquid or foam sclerotherapy for telangiectasia, reticular veins, and varicose veins (Grade 1B).

For treatment of the incompetent saphenous vein, the Guideline Committee recommends endovenous thermal ablation over chemical ablation with

foam (Grade 1B).

Special Venous Problems

Treatment of Perforating Veins

The Guideline Committee recommends against selective treatment of incompetent perforating veins in patients with simple varicose veins (CEAP class C_2) (Grade 1B).

The Guideline Committee suggests treatment of "pathologic" perforating veins that includes those with an outward flow duration of ≥500 ms, with a diameter of ≥3.5 mm, located beneath a healed or open venous ulcer (CEAP class C_5-C_6) (Grade 2B).

For treatment of "pathologic" perforating veins, the Guideline Committee suggests subfascial endoscopic perforating vein surgery, ultrasonographically guided sclerotherapy, or thermal ablations (Grade 2C).

Treatment of Pelvic Varicose Veins

The Guideline Committee recommends noninvasive imaging with transabdominal and/or transvaginal ultrasonography, computed tomography, or magnetic resonance venography in selected patients with symptoms of pelvic congestion syndrome or symptomatic varices in the distribution of the pubis, labia, perineum, or buttocks (Grade 1C).

The Guideline Committee recommends retrograde ovarian and internal iliac venography in patients with pelvic venous disease, confirmed or suspected by noninvasive imaging studies, in whom an intervention is planned (Grade 1C).

The Guideline Committee suggests treatment of pelvic congestion syndrome and pelvic varices with coil embolization, plugs, or transcatheter sclerotherapy, used alone or together (Grade 2B).

If less invasive treatment is not available or has failed, the Guideline Committee suggests surgical ligation and excision of ovarian veins to treat reflux (Grade 2B).

Definitions:

Ratings of Quality of Evidence

Quality of Evidence	Rating	Description
High	A	Further research unlikely to change confidence in estimate of effect.
Moderate	B	Further research likely to impact confidence in estimate of effect and may change estimate.
Low	C	Further research very likely to impact confidence in estimate of effect and likely to change estimate.

Strength of Recommendation

- Grade 1 recommendations ("strong") are those in which the benefits of an intervention clearly outweigh its risk and burdens. All well-informed patients would choose such a treatment, and the physician can securely recommend it without a detailed knowledge of the underlying data.
- Grade 2 recommendations ("weak") are weaker and reflect therapies where the benefits and risks are uncertain or are more closely balanced. For such interventions, patients may choose different options based on their underlying values.

The words "the Guideline Committee recommends" are used for Grade 1—strong recommendations—if the benefits clearly outweigh risks and burdens, or vice versa; the words "the Guideline Committee suggests" are used for Grade 2—weak recommendations—when the benefits are closely balanced with risks and burdens.

Grading Recommendations According to Evidence

Recommendation	Description of Recommendation	Benefits vs Risks and Burdens	Methodologic Quality of Supporting Evidence	Comment
1A	Strong	Benefits clearly outweigh	RCTs without important limitations or	Strong recommendation,

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1A	Strong recommendation, high-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs without important limitations or overwhelming evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1B	Strong recommendation, moderate-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1C	Strong recommendation, low-quality or very lower-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	Observational studies or case series	Strong recommendation but may change when higher quality evidence becomes available
2A	Weak recommendation, high-quality evidence	Benefits closely balanced with risks and burden	RCTs without important limitations or overwhelming evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2B	Weak recommendation, moderate-quality evidence	Benefits closely balanced with risks and burden	RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
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RCT = randomized controlled trial

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Varicose veins of the lower limbs and pelvis and associated chronic venous diseases (CVDs)

Guideline Category

Assessment of Therapeutic Effectiveness

Evaluation

Management

Treatment

Clinical Specialty

Hematology

Internal Medicine

Surgery

Intended Users

Physicians

Guideline Objective(s)

- To report recently formulated current recommendations for the evaluation and treatment of patients with varicose veins of the lower limbs and pelvis
- To report recommendations for management of superficial and perforating vein incompetence in patients with associated, more advanced chronic venous diseases (CVDs), such as venous edema, skin changes, or ulcerations

Target Population

- Adults with varicose veins of the lower limbs and pelvis
- Adults with superficial and perforating vein incompetence associated with more advanced chronic venous disorders (CVDs), such as venous edema, skin changes, or ulcerations

Interventions and Practices Considered

Diagnosis/Evaluation

1. Clinical examination of the lower limbs for chronic venous disease (CVD) (inspection, palpation, auscultation, and examination of ankle mobility)
2. Duplex scanning
3. Venous plethysmography
4. Selective use of imaging studies including computed tomography venography, magnetic resonance venography, ascending and descending contrast venography, and intravascular ultrasonography
5. Laboratory evaluation for thrombophilia
6. Use of the CEAP classification system: clinical class (C), etiology (E), anatomy (A), and pathophysiology (P) of chronic venous disease
7. Outcome assessment using the revised Venous Clinical Severity score, quality of life assessment, duplex scanning for follow-up, and reporting of procedure-related complications after therapy

Treatment/Management

1. Medical therapy including venoactive drugs
2. Compression therapy
3. Open venous surgery
4. Endovenous thermal ablation (laser and radiofrequency ablations)
5. Sclerotherapy of varicose veins
6. Treatment of perforating veins
7. Treatment of pelvic varicose veins

Major Outcomes Considered

- Varicose veins recurrence

- Patient satisfaction
- Esthetics
- Time to return to work
- Pain
- Procedurally related complications, including local wound complications, such as infection and hematoma, and systemic complications, including deep vein thrombosis (DVT), pulmonary embolism (PE), air embolism, and pulmonary fibrosis

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse: To assist in venous guideline development, the Society for Vascular Surgery (SVS) and the American Venous Forum (AVF) commissioned reviewers at the Knowledge and Evaluation Research Unit, Mayo Clinic, Rochester, to conduct a systematic review and meta-analysis to summarize the best available evidence about the benefits and harms of the different treatments of varicose veins (see the "Availability of Companion Documents" field).

Eligibility Criteria

Eligible studies were randomized controlled trials (RCTs) and cohort studies that enrolled participants with primary varicose veins who were treated with surgery, sclerotherapy, foam sclerotherapy, percutaneous endovenous thermal interventions (ablation with radiofrequency or laser), or conservative management with compression stockings. Reviewers included studies that measured any of the outcomes of varicose veins recurrence, patient satisfaction, esthetics, time to return to work, pain, and procedurally related complications, including local wound complications, such as infection and hematoma, and systemic complications, including deep vein thrombosis (DVT), pulmonary embolism (PE), air embolism, and pulmonary fibrosis. Studies were included regardless of their language, sample size, surgical technique, or duration of patient follow-up. Single-cohort studies (i.e., studies in which all patients received the same treatment without concurrent comparison groups) were excluded.

Study Identification and Data Collection

An expert reference librarian designed and conducted the electronic search strategy with input from study investigators with expertise in conducting systematic reviews. To identify eligible studies, electronic databases (MEDLINE, EMBASE, Cochrane CENTRAL, Web of Science, and Scopus) were searched through February 2008 and monitored the literature for new publications thereafter. References from experts, bibliographies of included trials, and the Institute for Scientific Information Science Citation Index for publications that cited included studies were also sought. A combination of subject headings and text words were used as needed to define varicosities and the various procedures. Results were limited to comparative studies. The detailed search strategy is available from the authors upon request.

References were uploaded in a Web-based software package developed for systematic review data management (SRS, TrialStat Corp, Ottawa, Ontario, Canada). Paired reviewers working independently screened all titles and abstracts for eligibility. References that were deemed potentially relevant were retrieved in full text and uploaded for full text evaluation against eligibility criteria. The chance-adjusted inter-reviewer agreement (κ statistic) for study eligibility was 0.79 (95% confidence interval [CI], 0.66-0.93). Disagreements were resolved by consensus (the two reviewers discussed the study and reached a consensus), and when disagreement continued, by arbitration (a third reviewer adjudicated the study). Teams of two reviewers working independently and using a standardized form extracted data in duplicate from all eligible studies, including study description, methodologic quality, and outcome data.

Number of Source Documents

The initial search yielded 1185 references, from which were found 44 eligible articles representing 39 unique studies. Figure 1 in the systematic review companion document (see the "Availability of Companion Documents" field) depicts the search and selection procedures.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Ratings of Quality of Evidence

Quality of Evidence	Rating	Description
High	A	Further research unlikely to change confidence in estimate of effect.
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Methods Used to Analyze the Evidence

Meta-Analysis

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

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Statistical Analysis

Meta-analyses

When appropriate, the reviewers pooled relative risks (RR) for dichotomous outcomes from each trial using the DerSimonian-Laird random effects model and estimated the 95% confidence interval (CI) for each outcome to reflect the uncertainty of point estimates of effect. A RR of 1.0 indicates no difference between the two interventions in association with a particular outcome. A RR >1.0 indicates that compared with the control intervention, the procedure increased the risk of outcome occurrence. For continuous outcomes, reviewers planned to estimate the weighted effect size and the 95% CI, and for outcomes assessed with multiple scales, the Guideline Committee planned to estimate the standardized mean difference. The reviewers used the I^2 statistic, which estimates the percentage of total variation across studies that is due to heterogeneity rather than chance (i.e., the percentage of variability in treatment effects across trials that is not due to chance or random error, but rather due to real differences in study patients, design or interventions). The I^2 values of ≤25%, 50%, and ≥75% represent low, moderate, and high inconsistency, respectively. Statistical analysis was conducted using StatsDirect 2.5.4 software (StatsDirect Ltd, Cheshire, United Kingdom).

Subgroup and Sensitivity Analyses

The a priori hypotheses to explore subgroup interactions and explain inconsistencies in the direction and magnitude of effect among studies included variation in bias protection measures and patient characteristics such as sex. Reviewers also planned to stratify results according to severity of chronic venous disease using the clinical, etiology, anatomy, pathophysiology (CEAP) classification, when reported (published in 1994 and revised in 2004). Reviewers planned to test the hypotheses of a subgroup effect using a test of interaction and to conduct meta-regression to assess the correlation between the effect size and the length of study follow-up. Sensitivity analysis to exclude short-term studies that were unlikely to evaluate outcome of interest was also conducted.

Methods Used to Formulate the Recommendations

Description of Methods Used to Formulate the Recommendations

Evidence-based medicine is the conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients. Guidelines for the care of patients with varicose veins, as recommended in the original guideline document, are based on scientific evidence. The need for adopting evidence-based guidelines and reporting standards for venous diseases has long been recognized by international experts and by leaders of the Society for Vascular Surgery (SVS) and American Venous Forum (AVF). To define current guidelines, members of the Venous Guideline Committee reviewed the relevant literature, including previously published consensus documents and guidelines, meta-analyses, the AVF reports on the Venous Summit at the 2006 and 2009 Pacific Vascular Symposiums and considered the recommendations published in the third edition of the *Handbook of Venous Disorders, Guidelines of the American Venous Forum*.

The guidelines are based on the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system, as it was described by Guyatt et al. (see the "Rating Scheme for the Strength of the Recommendations" field). For each guideline, the letter A, B, or C marks the level of current evidence. The grade of recommendation of a guideline can be strong (1) or weak (2), depending on the risk and burden of a particular diagnostic test or a therapeutic procedure to the patient vs the expected benefit.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendation

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Cost Analysis

The cost-effectiveness of conservative vs surgical therapy or sclerotherapy in patients with varicose veins was studied in the REACTIV trial. Cost-effectiveness analysis showed that surgery was significantly more cost-effective than both sclerotherapy and conservative management; sclerotherapy was less cost-effective than surgery but was still significantly more cost-effective than conservative treatment.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

The Document Oversight Committee of the Society for Vascular Surgery (SVS) conducts peer reviews of the guidelines documents. This committee consists of a panel of eight experts not involved in the aforementioned steps. Committee members who participated in writing the guidelines manuscript are excused from the review process.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate management of patients with varicose veins and associated chronic venous diseases (CVD)

Potential Harms

- The risk of perioperative deep vein thrombosis (DVT) is increased in patients with thrombophilia, in those with a history of DVT or thrombophlebitis, and in obese patients.

- Wound complications usually occur in 3% to 10% of patients undergoing open venous surgery, with reported wound infection rates as low as 1.5% and as high as 16%.
- DVT and pulmonary embolism (PE) are rare but occasionally serious complications of superficial vein surgery.
- Reported complications after transilluminated powered phlebectomy (TIPP) have varied considerably and include ecchymosis and hematoma in 4.9% to 95%, paresthesias and nerve injury in 9.5% to 39%, skin perforation in 1.2% to 5%, superficial phlebitis in 2.4% to 13%, swelling in 5% to 17.5%, hyperpigmentation in 1.2% to 3.3%, residual or recurrent varicose veins in 9.1% to 21.2%, and DVT in <1%.
- Complications associated with endovenous laser ablation (EVLA) include bruising, paresthesia, thrombophlebitis, skin burns, DVT and PE.
- Complications associated with radiofrequency ablation (RFA) include paresthesia, thrombophlebitis, ecchymosis along the course of the great saphenous vein (GSV), and skin pigmentation.
- Severe complications after sclerotherapy, such as death, anaphylactic reaction, pulmonary emboli, stroke, and large areas of skin necrosis, are very rare (<0.01%). Severe but rare complications also include thrombophlebitis, nerve damage (saphenous, sural), DVT, or inadvertent arterial injection of the solution. Transient neurologic adverse effects such as visual disturbance, migraine-like headache, or confusional state may occur and are more frequent in patients with a patent foramen ovale. Most complications are minor, and include matting, pigmentation, pain, allergy, and skin urticaria. The higher the concentration of the agent, the higher the likelihood of hyperpigmentation, a minor complication that can be observed in up to 30% of the cases. Between 70% and 95% of the pigmentations, however, resolve by 1 year after therapy. The incidence of major neurologic events after foam injection is rare; instances of stroke were reported by several authors. Immediate treatment with 100% oxygen and possibly hyperbaric oxygen therapy should be considered. Factors implicated in the risk of stroke after foam sclerotherapy include the use of air instead of carbon dioxide to prepare the foam, large bubble size, a patent foramen ovale, failure to elevate the limb after treatment, prolonged immobility after therapy, and an excessive amount of foam used during one session. Refer to the original guideline document for additional discussion of complications of sclerotherapy.
- Wound infection and saphenous neuralgia each occurred in 6% of patients undergoing subfascial endoscopic perforator surgery (SEPS).

Contraindications

Contraindications

- Inappropriate vein size (<2 mm and >15 mm for radiofrequency ablation [RFA]), a history of superficial thrombophlebitis resulting in a partially obstructed saphenous vein, and the uncommon occurrence of a tortuous great saphenous vein (GSV) on duplex examination are potential contraindications to endovenous thermal ablation.
- There are no absolute contraindications to endovenous laser ablation (EVLA), including vein diameter, although one study had recently suggested an association of central GSV diameter >8 mm with increased risk of extension of thrombus into the femoral vein. Other relative contraindications to EVLA or RFA include uncorrectable coagulopathy, liver dysfunction limiting local anesthetic use, immobility, pregnancy, and breastfeeding
- Advanced stages of chronic venous insufficiency may be associated with limitations or contraindications to surgical treatment by conventional vein stripping, including extensive dermatosclerosis, fibrosis, ulcer scarring sequelae, active ulcers, edema, or lymphedema, thus making the use of alternative methods of treatment necessary.

Qualifying Statements

Qualifying Statements

- Under no circumstance should these *Guidelines* be construed in practice or legal terms as defining the "standard of care," which is solely determined by the condition of the individual patient, treatment setting, and other factors. Individual factors in a given patient, such as symptom variance or combinations, comorbidities, work, and socioeconomic factors may dictate a different approach than that described in the *Guidelines*. Because technology and disease knowledge is rapidly expanding, new approaches may supersede these recommendations. As important new information on management of varicose veins and related chronic venous diseases (CVD) becomes available, these recommendations will be revised without delay.
- Despite the challenges and inconsistent availability of high-quality evidence, the Society for Vascular Surgery (SVS) maintains its effort to summarize, synthesize, and present all the available evidence, along with clear clinical practice recommendations, to help surgeons and their patients in decision making. Although the SVS uses state-of-the-art approaches, such as Grading of Recommendations, Assessment,

Development and Evaluation framework (GRADE), innovations are needed to improve the quality of evidence in the field and to improve the clarity and usefulness of these guidelines, which will lead to increased confidence in the advice vascular surgeons provide to their patients. Given the limited quality of the evidence, the issues with generalizability, and the importance of patient values, practice guidelines should not be regarded as definitive or prescriptive. Consistent with the tenets of evidence-based medicine, they should be used to inform clinical decision making in the context of the physician's clinical expertise and the patient's underlying values and preferences.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2011 May

Guideline Developer(s)

Society for Vascular Surgery - Medical Specialty Society

Source(s) of Funding

Society for Vascular Surgery

Guideline Committee

Venous Guideline Committee of the Society for Vascular Surgery (SVS) and the American Venous Forum (AVF)

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Committee members are required to provide a detailed, explicit description of their financial and intellectual conflicts of interest, consistent with the policies of the *Journal of Vascular Surgery*. Additional measures used to manage conflicts of interest include the multidisciplinary structure of guideline committees and the involvement of a methodology group in the evidence synthesis and guidelines integration.

Competition of interest: none.

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from the Journal of Vascular Surgery Web site .

Availability of Companion Documents

The following are available:

- Murad MH, Coto-Yglesias F, Zumaeta-Garcia M, Elamin MB, Duggirala MK, Erwin PJ, Montori VM, Gloviczki P. A systematic review and meta-analysis of the treatments of varicose veins. J Vasc Surg. 2011 May;53(Suppl 2):51S-67S. Electronic copies: Available from the Journal of Vascular Surgery Web site .
- Murad MH, Montori VM, Sidawy AN, Ascher E, Meissner MH, Gloviczki P. Guideline methodology of the Society for Vascular Surgery including the experience with the GRADE framework. J Vasc Surg. 2011 May;53:1375-80. Electronic copies: Available from the Journal of Vascular Surgery Web site .

Patient Resources

None available

NGC Status

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